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REMARKS

Claims 1-20 of the application stand rejected. Claims 1, 6, 7, 11, 14, 17 and 20 have been amended herein to more clearly define the scope of the presently claimed invention. Applicant respectfully requests reconsideration of pending Claims 1-22 in light of the amendments and remarks herein.

35 U.S.C. §112, first paragraph

Claims 1-20 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. Specifically, the Examiner states that the claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The subject matter at issue according to the Examiner is the limitation of "requesting a password from a basic input-output system (BIOS)." Applicant respectfully traverses the Examiner's rejection.

Simply put, Applicant completely fails to understand the Examiner's rationale. The specification goes to great lengths to describe "BIOS data" and how the password is stored in "BIOS data". For example, the Specification describes:

"BIOS data 210 is data stored in memory that is either within the BIOS 208 or accessible to the BIOS 208.

One embodiment of the present invention is a system comprising a processor, a hard drive coupled to the processor, an operating system 204, a BIOS 208, a password, and a plurality of drivers 206. The password is used to unlock the hard drive. One example of a password is a system-specific password that is unique to a computer system, such as a processor serial number. The operating system 204, BIOS 208, and drivers 206 execute on the processor. In one embodiment, a driver 212 from the plurality of drivers 206 executes from the operating system 204. In another embodiment, the operating system 204 is stored in flash memory and initialized before unlocking the hard drive. In another embodiment, a kernel and other modules of the operating system 204 are placed in flash memory so that boot times are faster and the time waiting for the hard drive to spin up is minimized. The kernel is the core of a computer operating system 204 and it provides basic services for all the other parts of the operating system 204.

In another embodiment, the password is stored in BIOS data 210 and is used to unlock the hard drive. This is performed by a driver 212 in the plurality of drivers 206. The driver 212 accesses the BIOS 208, which retrieves the password from the BIOS data 210 and returns the password to

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the driver 212. One example of a driver 212 is an integrated device electronics (IDE) driver. IDE is a standard electronic interface. Some embodiments of the present invention use the enhanced version (EIDE) of IDE, which has a disk drive controller built into the logic board in the disk drive.

In one embodiment, a driver 212 of the present invention requests a password for each locked hard drive from the BIOS 208 via a system management interrupt (SMI). SMIs are interrupts that are asserted by the operating system 204. The operating system 204 asserts SMIs by programming the chipset by, for example, filling in registers and toggling bits in the chipset. Once an SMI is asserted, system management software modules in the BIOS 208 handle the SMI. If the BIOS 208 determines it is safe to do so, the BIOS 208 returns the password to the driver 212. The driver 212 sends the password to unlock the hard drive and then freezes the lock mechanism to prevent tampering with the password. If the password is system-specific, access to the contents of a locked hard drive is only allowed on authorized systems. Thus, the password protected hard drive is only accessible and bootable on the system when it is secure.

In one embodiment, security components, such as password generation components, are placed in the BIOS 208 and SMI is used to access them. In this way, the security components are more difficult to hack. The BIOS 208 checks other security mechanisms like chassis intrusion before returning the hard drive password to the driver 212. This protects against snooping the password on a bus. By automating password generation in the BIOS 208 rather than querying the user, system-specific passwords are generated in the factory or during installation that are very difficult to crack." (emphasis added)

Specification, Paragraphs 7-11

Applicant respectfully submits that the descriptions provided in the specification, examples of which are emphasized above, are more than sufficient to enable one of ordinary skill in the art to practice the invention without undue experimentation. The Examiner's only rationale for this rejection appears to be a definition of the term "BIOS" from Answers.com that defines BIOS as "a set of routines". Without addressing the propriety or accuracy of this definition, Applicant respectfully points the Examiner to a more technical definition of the term, as would be understood by those of ordinary skill in the art, e.g., at Webopedia.com. The definition of BIOS on Webopedia, for example, is as follows:

"Acronym for basic input/output system, the built-in software that determines what a computer can do without accessing programs from a disk. On PCs, the BIOS contains all the code required to control the keyboard, display screen, disk drives, serial communications, and a number of miscellaneous functions. The BIOS is typically placed in a ROM chip that comes with the computer (it is often called a ROM BIOS). ...Because RAM is faster than ROM, though, many computer manufacturers design systems so that the BIOS is copied from ROM to RAM each time the computer is booted...Many modern PCs have a flash BIOS, which means that the BIOS has been recorded on a flash memory chip, which can be updated if necessary. The PC BIOS is fairly standardized, so all PCs are similar at this level (although there are different BIOS versions.)"

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Applicant respectfully submits that based on the description in the specification, and the term "BIOS" as would be understood to those of ordinary skill in the art, the specification more than enables all the limitations of Claims 1-20. Applicant therefore respectfully requests the Examiner to withdraw the 35 U.S.C. §112, first paragraph rejection to Claims 1-20.

35 U.S.C. §112, second paragraph

Claims 6 and 20 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Specifically, the Examiner cites a limitation in Claim 6 that has insufficient antecedent basis and a term in Claim 20 that the Examiner submits renders the claim indefinite. Applicant respectfully submits that Claims 6 has been amended to provide sufficient antecedent basis for the limitation "the plurality of drivers" while Claim 20 has been amended herein to replace the term "approximately." Applicant therefore respectfully submits that the 35 U.S.C. §112, first paragraph rejections to Claims 6 and 20 have been overcome and respectfully request the Examiner to withdraw the rejection to these claims.

35 U.S.C. §103

Claims 1-4, 6-7, 14-15 and 17-19 stand rejected under 35 U.S.C. §103 as being unpatentable over Liebenow (U.S. Patent No. 6,012,146, hereafter "Liebenow") in view of Beckert et al (U.S. Patent No. 6,701,994, hereafter "Beckert"). Additionally, Claims 5 and 16 stand rejected under 35 U.S.C. §103 as being unpatentable over Liebenow and Beckert, in further view of OEM Manual (hereafter "OEM"). Claims 9-10 stand rejected under 35 U.S.C. §103 as being unpatentable over Liebenow in view of Beckert in further view of Parzych et al (U.S. Patent No. 5,375,243, hereafter "Parzych"). Claim 8 stands rejected under 35 U.S.C. §103 as being unpatentable over Liebenow in view of Beckert in further view of Dell PowerEdge 7150" (hereafter "Dell") and in further view of

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McNabb et al. (U.S. Patent No. 6,289,462, hereafter "McNabb"). And finally, Claims 11 and 13 stand rejected under 35 U.S.C. §103 as being unpatentable over Liebenow in view of Beckert in further view of Dell in further view of McNabb and in further view of Parzych. Applicant respectfully traverses the Examiner's rejection.

Since all of the above rejections appear to rely on a minimum combination of Liebenow and Beckert, Applicant first addresses the propriety of combining these references. Upon examination, Applicant respectfully submits that the references cannot be combined in the manner suggested by the Examiner. Liebenow describes a device and method for preventing access to data on a hard drive in which a first password is stored on the hard drive so that it is not accessible from a system in which the hard drive is installed, and in which a second password is provided from the system (Liebenow, Abstract). Beckert, on the other hand, describes methods and systems for operating automotive computing devices. The Examiner's alleged motivation for combining these references is "to help transfer information between elements within the computer." Applicant strongly disagrees.

Applicants respectfully submit that Liebenow and Beckert are not analogous areas of art. Liebenow focuses on removable hard drives while Beckert emphasizes automotive computing devices. . The mere fact that both references fall into the general area of "computing systems" does not in and of itself render them analogous. Applicant's review of both references shows that there is absolutely nothing in either reference that would suggest a combination. As set out in M.P.E.P. § 706.02(j), "(t)here must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings." Applicants strongly disagree that that there is any such motivation in the present case.

The Examiner's stated motivation is purely speculative. Applicant respectfully submits rather than a motivation, the Examiner merely states an end result. There is no teaching in either Liebenow or Beckert to actually suggest this

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combination. The mere fact that the combination may provide an advantage does not *prima facie* mean that the combination is obvious. In the present case, there is no teaching in either reference to suggest that it would have been obvious to one of ordinary skill in the art to combine the references in the manner described by the Examiner. Applicant therefore respectfully submits that the combination of these references is improper and respectfully request the Examiner to withdraw the 35 U.S.C. § 103 rejections to Claims 1-20.

Even assuming *arguendo* these references were properly combined, Applicants respectfully submit that the combination of Liebenow and Beckert does not provide the basis for the Examiner's rejection of Claims 1-20. As previously stated, the Examiner concedes that Liebenow does not explicitly teach the element of "loading an operating system" but suggests that this element is taught by Beckert. Applicant respectfully disagrees that this combination is proper and/or that the combination teaches all elements of the claimed invention.

First and foremost, Applicant respectfully highlights the fact that, as described in the specification, the claimed invention is directed to systems and methods of hard drive security *for fast boot* (Specification, Paragraph 5). In other words, the scheme described in the claimed invention (as embodied in the claims), enables the device to boot quickly while still enforcing a security mechanism. Independent Claims 1, 7, 11, 14 and 17, as amended, highlight the fact that the various elements of the invention occur before, during and/or after the boot sequence of the device.

In contrast, the scheme in Liebenow is not tied in any way to *the boot process*. The Examiner glosses over the fact that Liebenow does not disclose the element of "loading an operating system" but Applicant respectfully reminds the Examiner that a core features of the invention is the fact that during the boot process, the operating system may be loaded prior to execution of the security mechanism.

The combination of Beckert with Liebenow also does not teach or suggest the claimed invention. Specifically, the section of Beckert highlighted by the Examiner reads as follows:

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"A portion of the operating system, such as kernel 362, contains the basic routines that help to transfer information between elements within computer 202, such as during start-up, can be stored in ROM 358 or flash memory 361."

Beckert, Col. 7, lines 43-46

This portion of Beckert merely states a fact, namely that an operating system kernel may be stored in ROM or flash memory. This has no implication whatsoever to the claimed invention, and more importantly, does not raise any implication that the security scheme described in Liebenow occurs during a boot sequence. As a result, Applicant respectfully submits that Liebenow and/or Beckert, alone or in combination, do not render the claimed invention unpatentable.

With respect to the other cited references, Applicant respectfully submits that they are irrelevant to render the claimed invention unpatentable. The Examiner relies on the combination of Liebenow and Beckert to teach all the elements of the independent claims, while the other references are cited to teach or suggests elements of the dependent claims. Applicant respectfully contends that since Liebenow and Beckert do not teach all the elements of the independent claims, and since none of the other references teach or suggest the missing features of the independent claims, the combination of Liebenow and/or Beckert with any of the other references also does not teach or suggest the claimed invention.

In summary, Applicant respectfully submits that Liebenow, alone or in combination with Beckert, does not teach or suggest the necessary elements to render the claimed invention unpatentable. Applicant therefore respectfully submits that neither of these references, alone, in combination with each other and/or in combination with the other cited references, renders independent Claims 1, 7, 11, 14 and 17 unpatentable. Similarly, the references cannot render all claims dependant on these independent claims unpatentable. Applicants therefore respectfully request the Examiner to withdraw the rejection to Claims 1-22 under 35 U.S.C. §103.

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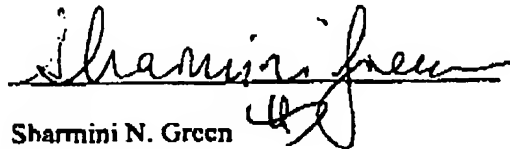
CONCLUSION

Based on the foregoing, Applicants respectfully submit that the applicable objections and rejections have been overcome and that pending Claims 1-20 are in condition for allowance. Applicants therefore respectfully request an early issuance of a Notice of Allowance in this case. If the Examiner has any questions, the Examiner is invited to contact the undersigned at (714) 669-1261.

If there are any additional charges, please charge Deposit Account No. 50-0221.

Respectfully submitted,

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